



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/722,756

11/26/2003

Arun Prakash

PD-03-0415

7205

22462

7590

10/11/2006

GATES & COOPER LLP  
HOWARD HUGHES CENTER  
6701 CENTER DRIVE WEST, SUITE 1050  
LOS ANGELES, CA 90045

EXAMINER

BEHNCKE, CHRISTINE M

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/722,756

Applicant(s)

PRAKASH ET AL.

Examiner

Christine M. Behncke

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1- 3, 5-8, 11- 14, 16-19, 22- 25, 27-30 and 33 is/are rejected.
- 7) ☒ Claim(s) 4,9,10,15,20,21,26,31 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                               |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                          | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/26/04 &amp; 4/2/04</u> . | 6) <input type="checkbox"/> Other: _____                                                |

### DETAILED ACTION

1. This office action is in response to the application filed 26 November 2003, in which claims 1-33 were presented for examination.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 12, 13, 23, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Basuthakur et al., US 6,003,817.

3. **(Claims 1, 12, and 23)** Basuthakur et al. discloses a method, an apparatus and means for controlling a plurality of solar panels coupled to a spacecraft (Abstract), comprising the steps of: providing a first step command to a first solar panel (column 7, lines 37-52); and providing a second step command to a second solar panel at a time of a transient zero-crossing of a dynamic response of the spacecraft body to the first step command (column 7, line 54-column 8, line 14 and Figure 7); wherein the second solar panel is disposed on an opposite side of the spacecraft from the first solar panel (Figure 1).

4. **(Claims 2, 13, and 24)** Basuthakur et al. further discloses wherein the first solar panel and the second solar panel are rotatable about a longitudinal axis (Figure 1), and at least one of the first solar panel and the second solar panel are tilted away from a spacecraft body pitch axis (column 3, lines 56-67 and column 4, lines 22-39).

***Claim Rejections - 35 USC § 102***

5. Claims 1, 3, 5-8, 11, 12, 14, 16-19, 22, 23, 25, 27-30 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Kazimi et al., US 6,311,929.
6. (**Claims 1, 12, and 23**) Kazimi et al. discloses a method, an apparatus and means for controlling a plurality of solar panels coupled to a spacecraft (column 1, lines 13-28), comprising the steps of: providing a first step command to a first solar panel (column 3, lines 33-52); and providing a second step command to a second solar panel at a time of a transient zero-crossing of a dynamic response of the spacecraft body to the first step command (column 3, line 33-column 4, line 3 and Figure 2); wherein the second solar panel is disposed on an opposite side of the spacecraft from the first solar panel (Figure 1, column 3, lines 33-45).
7. (**Claims 3, 14, and 25**) Kazimi et al. further discloses wherein: the step of providing a first step to the first solar panel comprises the steps of: computing a first solar panel command (column 1, line 62-column 2, lines 4); providing the computed first solar panel command to a first solar panel driver (column 2, lines 29-31), the step of providing a second step command to a second solar panel at a time of a transient zero-crossing of a dynamic response of the spacecraft body to the first step command comprises the steps of: computing a second solar panel command (column 2, lines 41-50); biasing the computed second solar panel command by a transient cancellation bias (column 4, lines 14-33); providing the biased second solar panel command to a second solar panel driver (column 2, lines 30-33).

8. (Claims 5, 6, 16, 17, 27, and 28) Kazimi et al. further discloses wherein the transient cancellation bias is determined by terrestrially-based processors simulating/testing the dynamic response of the spacecraft body to the first step command (column 2, lines 35-40).

9. (Claims 7, 8, 18, 19, 29, and 30) Kazimi et al. further discloses wherein the transient cancellation bias is estimated by testing of the dynamic response of the spacecraft body by a spacecraft processor (column 2, lines 35-40, line 66-column 3, line 8).

10. (Claims 11, 22, and 33) Kazimi et al. further discloses wherein: the step of providing a first step to the first solar panel comprises the steps of: computing a first solar panel bias command (column 4, lines 34-65); computing the first step command at least in part from the first solar panel bias command (Figure 3 and column 4, lines 34-65); providing the first step command to a first solar panel driver (column 3, lines 33-52), the step of providing a second step command to a second solar panel at a time of a transient zero-crossing of a dynamic response of the spacecraft body to the first step command comprises the steps of: computing a second solar panel bias command (column 4, lines 34-65); computing the second step command at least in part from the second solar panel bias command (column 2, lines 41-50); providing the computed second solar panel bias command to the solar panel driver, and biasing a second solar panel position by a transient cancellation bias (column 4, lines 14-33 and lines 34-65).

***Allowable Subject Matter***

Art Unit: 3661

11. **Claims 4, 9, 10, 15, 20, 21, 26, 31 and 32** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB

  
THOMAS BLACK  
SUPERVISORY PATENT EXAMINER